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Jeroen Siebrand Wellen

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EXAMINER

KIM, DAVID S

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/808,683	Applicant(s) WELLEN, JEROEN SIEBRAND	
	Examiner DAVID S. KIM	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-9,11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-9,11 and 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 3, 4, 6-9, 11, and 13-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Combs et al. (U.S. Patent No. 6,751,417 B1, hereinafter “Combs”) in view of de Cook et al. (“Optical fiber access-perspectives toward the 21st century”, hereinafter “Cook”).

Regarding claim 1, Combs discloses:

In an access network, a method for the communication of services between a central office and customer premises (end-users 112 in Fig. 1), comprising:

transmitting (arrows pointing to the right in Figs. 3-4) services from said central office (head-end 102 in Fig. 1) to said customer premises through a passive optical downstream path (e.g., paths associated with optical splitters 316 in Fig. 3 and 304 in Fig. 4) having a first termination at said central office (e.g., termination of 114 at head-end 102 in Fig. 1); and

receiving (arrows pointing to the left in Figs. 3-4) services from said customer premises at said central office from an active optical path (e.g., upstream links in Figs. 3-4) having a first termination (e.g., termination at end-users 112 in Fig. 1) at said customer premises and a second termination at said central office (e.g., termination of 114 at head-end 102 in Fig. 1).

Combs does not expressly disclose:

said ***passive*** optical downstream path having a ***second termination at said customer premises.***

Rather, Combs teaches a distribution configuration to customer premises where the passive optical downstream path has a second termination at an intermediate distribution site before the customer premises (mini-fiber nodes 108 in Fig. 1). Notice that this distribution configuration to customer premises is also known as a fiber/coax hybrid network, as noted in Cook (p. 83-84, “Fiber/Coax Systems”), since it employs fiber and coaxial lines in a hybrid network (Combs, fibers 114, 120, 122 and coaxial lines in col. 3, l. 42-43). However, other alternative distribution configurations to customer premises are known in the field of art, such as “fiber-to-the-building” (Cook, FTTB in Fig. 6) and “fiber-to-the-home” (FTTH) (Cook, “Fiber-to-the-Home” on p. 84, col. 2., last paragraph – p. 85, col. 1). FTTB and FTTH both employ a passive optical downstream path with a second termination at customer premises (Cook, fiber to Customer's premises in Fig. 6, “fiber-to-the-home” implies termination at the “home”/customer premises). As they both present suitable alternatives to a fiber/coax hybrid network, it follows that they constitute obvious variations. Moreover, movement toward digital baseband solutions is likely to encourage the adoption of an all fiber approach, such as FTTH, for fully adequate upstream capability for the long term (Cook, p. 86, col. 1, 1st two full paragraphs).

Regarding claim 3, Combs in view of Cook discloses:

The method of claim 1, wherein said passive optical downstream path comprises a means for splitting optical signals (optical splitters 316 in Fig. 3 and 304 in Fig. 4).

Regarding claim 4, Combs in view of Cook discloses:

The method of claim 3, wherein said means for splitting optical signals comprises an optical power splitter (optical splitters 316 in Fig. 3 and 304 in Fig. 4).

Regarding claim 6, Combs in view of Cook discloses:

The method of claim 1, wherein said active optical upstream path comprises:
at least one receiver for receiving services from said customer premises intended for upstream transmission (e.g., transceivers in 312 in Fig. 4).

Combs does not expressly disclose:

at least one switch for aggregating and multiplexing upstream traffic.

However, such switches are extremely well known in the art. Notice that Combs discloses the use of time-division multiplexing (TDM) for aggregating and multiplexing upstream traffic (col. 8, l. 5-8). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement this TDM with at least one switch. One of ordinary skill in the art would have been motivated to do this since TDM is conventionally performed with a switch.

Regarding claim 7, Combs in view of Cook discloses:

The method of claim 6, wherein said active optical upstream path further comprises:
at least one transmitter for transmitting the aggregated services upstream (digital lightwave transmitter in 302 in Fig. 4).

Regarding claim 8, claim 8 is an apparatus claim that corresponds largely to the method claim 6. Therefore, the recited steps in method claim 6 read on the corresponding means in apparatus claim 8. Claim 8 also includes limitations absent from claim 6. Combs in view of Cook also discloses these limitations:

a splitter disposed in a passive optical downstream path (e.g., paths associated with optical splitters 316 in Fig. 3 and 304 in Fig. 4), for splitting downstream services transmitted from said central office through said passive optical downstream path (optical splitter 304 in Fig. 4);

at least one receiver disposed in an active optical upstream path (e.g., upstream links in Figs. 3-4), for receiving services from said customer premises from said active optical upstream path (e.g., lightwave receivers in 320 in Fig. 3, transceivers in 312 in Fig. 4).

Regarding claim 9, Combs in view of Cook discloses:

The apparatus of claim 8, further comprising:
at least one transmitter for transmitting aggregated services upstream (digital lightwave transmitter in 302 in Fig. 4).

Regarding claim 11, Combs in view of Cook does not expressly disclose:

The apparatus of claim 10, wherein said passive optical downstream path further comprises a repeater.

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However, repeaters are extremely well known in the art. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to arrange said passive optical path of Combs to further comprise a repeater. One of ordinary skill in the art would have been motivated to do this since repeaters are generally used to boost signal power along a transmission path so that transmission signals can travel farther.

Regarding claim 13, Combs in view of Cook discloses:

The apparatus of claim 8, wherein said active optical upstream path further comprises a transmitter (the digital lightwave transmitter in 302 in Fig. 4 is an active component).

Regarding claim 14, Combs in view of Cook discloses:

The apparatus of claim 8, wherein said splitter comprises a power splitter (optical splitter generally operate to split power).

Regarding claim 15, Combs in view of Cook discloses:

The apparatus of claim 8, wherein said apparatus is located within a central office of an access network configured for point-to-point communication (e.g., communication between the point of head-end 102 and the point of an end-user 112 in Fig. 1).

Regarding claim 16, Combs in view of Cook discloses:

An apparatus for the communication of services between a central office and customer premises in an access network, comprising:

a means for splitting downstream services transmitted from said central office (head-end 102 in Fig. 1) through a passive optical downstream path (e.g., paths associated with optical splitters 316 in Fig. 3 and 304 in Fig. 4);

at least one means for receiving services (e.g., lightwave receivers in 320 in Fig. 3, transceivers in 312 in Fig. 4) from said customer premises (Combs, end-users 112 in Fig. 1; Cook, fiber to Customer's premises in Fig. 6, "fiber-to-the-home" implies termination at the "home"/customer premises) from an active optical upstream path (e.g., upstream links in Figs. 3-4); and

at least one means for aggregating and multiplexing upstream traffic in said active optical upstream path (e.g., 318 in Fig. 3, 310 and 308 in Fig. 4);

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wherein said passive optical downstream path has a first termination at said central office (e.g., termination of 114 at head-end 102 in Fig. 1) and a second termination at said customer premises (Cook, fiber to Customer's premises in Fig. 6, "fiber-to-the-home" implies termination at the "home"/customer premises);

wherein said active optical upstream path has a first termination at said customer premises (Combs, e.g., termination at end-users 112 in Fig. 1; Cook, fiber to Customer's premises in Fig. 6, "fiber-to-the-home" implies termination at the "home"/customer premises) and a second termination at said central office (e.g., termination of 114 at head-end 102 in Fig. 1).

Regarding claim 17, Combs in view of Cook discloses:

The apparatus of claim 16, further comprising:

at least one means for transmitting the aggregated services upstream (e.g., lightwave transmitters in 314 in Fig. 3, lightwave transmitters in Fig. 4).

Regarding claim 18, Combs in view of Cook discloses:

A passive/active access network for the communication of services between a central office and customer premises, comprising:

a central office (head-end 102 in Fig. 1);

at least one customer premise (end-users 112 in Fig. 1); and

an active/passive access unit (Figs. 3-4) for providing communication between said central office and said at least one customer premise, wherein said passive/active access network is adapted to:

transmit services from said central office to said customer premises through said passive optical downstream path (e.g., paths associated with optical splitters 316 in Fig. 3 and 304 in Fig. 4), wherein said passive optical downstream path has a first termination at said central office (e.g., termination of 114 at head-end 102 in Fig. 1) and a second termination at said customer premises (Cook, fiber to Customer's premises in Fig. 6, "fiber-to-the-home" implies termination at the "home"/customer premises); and

receive services (e.g., lightwave receivers in 320 in Fig. 3, transceivers in 312 in Fig. 4) from said customer premises at said central office from said active optical upstream path (e.g., upstream links in Figs. 3-4), wherein said active optical upstream path has a first termination at said customer premises

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(Combs, e.g., termination at end-users 112 in Fig. 1; Cook, fiber to Customer's premises in Fig. 6, "fiber-to-the-home" implies termination at the "home"/customer premises) and a second termination at said central office (e.g., termination of 114 at head-end 102 in Fig. 1).

Regarding claim 19, Combs in view of Cook discloses:

The passive/active access network of claim 18, wherein said passive optical downstream path of said active/passive access unit comprises a means for splitting (optical splitters 316 in Fig. 3 and 304 in Fig. 4) services from said central office.

Regarding claim 20, Combs in view of Cook discloses:

The passive/active access network of claim 18, wherein said active optical upstream link of said active/passive access unit comprises:

at least one means for receiving (e.g., lightwave receivers in 320 in Fig. 3, transceivers in 312 in Fig. 4) services from said at least one customer premise;

at least one means for aggregating and multiplexing upstream traffic (e.g., 318 in Fig. 3, 310 and 308 in Fig. 4); and

at least one means for transmitting (e.g., lightwave transmitters in 314 in Fig. 3, lightwave transmitters in Fig. 4) the aggregated services upstream to said central office.

Response to Arguments

3. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. In particular, notice the teachings applied from newly discovered Cook.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

De Boer et al. ("Connecting homes with fibre-optics") is cited to show teachings about Fiber-to-the-Home (FTTH) and Fiber-to-the-Curb or Cabinet (FTTC) (e.g., p. 9-13) and to show a passive optical downstream path having a first termination at a central office and a second termination at customer premises (downstream path in Fig. 2).

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Wilson et al. ("FiberVista: An FTTH or FTTC system delivering broadband data and CATV services") is cited to show teachings about Fiber-to-the-Home (FTTH) and Fiber-to-the-Curb or Cabinet (FTTC) (e.g., Figs. 4 and 7).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID S. KIM whose telephone number is (571)272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. S. K./
Examiner, Art Unit 2613

/Kenneth N Vanderpuye/
Supervisory Patent Examiner, Art Unit 2613